

a second vacuum chamber;

a laser processing apparatus comprising a laser processing chamber and a laser for irradiating the exposed surface of said semiconductor layer with a laser light in said laser processing chamber after said etching, said laser processing chamber connected to said etching apparatus through said second vacuum chamber; and

a mechanism for transporting said substrate from said ion introducing apparatus to said laser processing chamber without exposing said substrate to the air,

said dopant impurity being made a plasma around a grid electrode of said ion introducing apparatus and being accelerated toward said semiconductor layer by a voltage applied to an anode electrode of said ion introducing apparatus.

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(Amended) An apparatus for processing a semiconductor comprising:

a first vacuum chamber;

an ion introducing apparatus for doping a semiconductor layer formed over a substrate with a dopant impurity through an insulating film comprising oxide provided over said semiconductor layer;

an etching apparatus for etching said insulating film comprising oxide to expose a surface of said semiconductor layer, said etching apparatus connected to said ion introducing apparatus through said first vacuum chamber;

a second vacuum chamber;

a laser processing apparatus comprising a laser processing chamber and a laser for irradiating the exposed surface of said semiconductor layer with a rectangular shaped laser light in said laser processing chamber after said etching, said laser processing chamber connected to said etching apparatus through said second vacuum chamber; and

a mechanism for transporting said substrate from said ion introducing apparatus to said laser processing chamber without exposing said substrate to the air,

said rectangular-shaped laser light has a length greater than a width of said substrate,

said dopant impurity being made a plasma around a grid electrode of said ion introducing apparatus and being accelerated toward said semiconductor layer by a voltage applied to an anode electrode of said ion introducing apparatus.

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(Amended) An apparatus for forming a semiconductor device comprising:
a first vacuum chamber;

an ion introducing apparatus for doping a semiconductor layer formed over a substrate with a dopant impurity through an insulating film comprising oxide provided over said semiconductor layer;

an etching apparatus for etching said insulating film comprising oxide to expose a surface of said semiconductor layer, said etching apparatus connected to said ion introducing apparatus through said first vacuum chamber;

a second vacuum chamber;

a laser processing apparatus comprising a laser processing chamber and a laser for irradiating the exposed surface of said semiconductor layer with a laser light in said laser processing chamber after said etching, said laser processing chamber connected to said etching apparatus through said second vacuum chamber; and

a mechanism for transporting said substrate from said ion introducing apparatus to said laser processing chamber without exposing said substrate to the air,

said dopant impurity being made a plasma around a grid electrode of said ion introducing apparatus and being accelerated toward said semiconductor layer by a voltage applied to an anode electrode of said ion introducing apparatus.

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(Amended) An apparatus for processing a semiconductor comprising:
a first vacuum chamber;

an ion introducing apparatus for doping a semiconductor layer formed over a substrate with a dopant impurity through an insulating film comprising oxide provided over said semiconductor layer;

an etching apparatus for etching said insulating film comprising oxide to expose a surface of said semiconductor layer, said etching apparatus connected to said ion introducing apparatus through said first vacuum chamber;

a second vacuum chamber;

a light processing apparatus comprising a light processing chamber and a light source chamber for irradiating the exposed surface of said semiconductor layer with

an infrared light in said light processing chamber after said etching, said light processing chamber connected to said etching apparatus through said second vacuum chamber; and

12 a mechanism for transporting said substrate from said ion introducing apparatus to said light processing chamber without exposing said substrate to the air,

said dopant impurity being made a plasma around a grid electrode of said ion introducing apparatus and being accelerated toward said semiconductor layer by a voltage applied to an anode electrode of said ion introducing apparatus.
